

ENCLOSURE 2

Comments of the Indiana Department of Environmental Management on the Emissions Inventory and Growth Projections

This document contains IDEM's initial specific comments on the emissions inventory assumptions and growth projections used by USEPA to develop the baseline and projected NOx budgets for Indiana contained in its proposed rule. This information supplements that submitted through the Lake Michigan Air Directors Consortium (LADCO).

General Comments:

The comment period has been insufficient and necessary data have not been readily available.

IDEM has reviewed the inventory information to the extent it was available and the 120 day comment period allowed. We have requested input from Indiana utilities and other large non-utility NOx sources, and expect to continue working with them to finalize our comments in April 1998.

IDEM emphasizes that 120 days has been inadequate to review USEPA's information, compare it to IDEM's information, and solicit specific input from affected sources. The lack of available information from USEPA has made it even more difficult to comment within the deadline. In addition, IDEM understands that USEPA has made changes to the inventory since the issuance of the proposed rule but those changes have not been available for review. Updated data should be made available in summary form in a location where it can be easily obtained by states and other interested parties.

The most current information should be used for the base inventory.

IDEM urges USEPA to use data more recent than 1990 wherever possible. With respect to mobile and non-utility sources, specifically, 1995 or 1996 data should be used for the baseline.

IDEM appreciates that the inventory correction process cannot continue indefinitely and plans to complete its review of the inventory by April 1998. However, inventory development is an ongoing process and USEPA must be open to improving and correcting its base of information whenever significant errors are identified.

Specific Comments:

Following are comments specific to the inventory categories. The attachments contain specific corrections for utility sources, non-utility sources and mobile sources.

A. Utilities

IDEM agrees that data from continuous emission monitors for 1995 and 1996 provides a better baseline than 1990 data. IDEM has reviewed the utility point source inventory in Appendix A of the Technical Support Document and identified several changes errors. This data has also been reviewed by the utility companies and their changes are presented below. IDEM has included a list from the LADCO inventory that contains the complete inventory for Indiana. This should replace the SIP Call inventory (**Attachment A**).

IDEM was not able to obtain and analyze the heat input files necessary to check the average daily emissions for each utility source. We have relied upon the work LADCO has performed for the above table.

USEPA has used the Integrated Planning Model (IPM) for utility growth projections. IDEM requests that USEPA discuss other available projection models and its reasons for selecting IPM over other models and methods. IDEM understands that IPM has capability to examine control strategies and U.S. EPA has used this model for cost effectiveness and regulatory impact analyses taking into account technological, economic and regulatory factors that will affect utilities. In order to help states analyze and develop strategies, we urge U.S. EPA to make IPM available to interested parties.

IDEM understands that USEPA has recently made changes to the Indiana utility NO_x emission budget so that units smaller than 25 MW and units that generate electricity for internal purposes have been included. We agree with the inclusion of these units in the budget, however, the reasonableness of a 0.15 lb/mmBtu emission limit for internal units needs further analysis. In addition, the IPM growth factor has been increased from 1.27 to 1.3. IDEM requests that USEPA explain the reason for this change. IDEM expects to comment further on utility growth assumptions in its supplemental comments.

IDEM agrees with USEPA that it is important to accurately characterize the summer electrical usage of every jurisdiction affected by the proposed Ozone Transport Rule separately. USEPA used the higher of 1995 or 1996, May 1 through September 30 USEPA Emission Tracking System (ETS) hourly heat input state composite utilization data for calculating an affected state's utility NO_x budget component for utility boilers with nameplate capacities of 25 megawatts or greater. Instead, USEPA should use as many years as available (e.g., 1997). It is imperative that the hourly heat input utilization data contained in the USEPA ETS be accurate (i.e., agreement between what each utility reports to the ETS and what is ultimately stored in the ETS for that utility). Seasonal state-by-state shifts in electricity generation are accounted for by using hourly heat input state composite utilization data as proposed by USEPA. However, as a further

refinement to this approach, USEPA should investigate unit specific shifts in electricity generation. Using as many years of quality checked, unit-specific ETS hourly heat input data for the May 1 through September 30 period, USEPA could base a state's composite utilization on a unit's highest reported heat input utilization data regardless of year of occurrence.

Two utilities requested that the following changes be made to the hourly heat input values used by USEPA in the proposed rule, based upon data supplied by them in electronic data reports to USEPA.

Cinergy

Edwardsport Unit #6-1 heat input from 0 mmBTU to 48,433 for 1995

Gibson Unit #3 heat input from 5,808,140 mmBTU to 13,818,859 mmBTU for 1996

Gibson Unit #4 heat input from 6,352,554 mmBTU to 16,590,883 mmBTU for 1996

Wabash River Unit #1 heat input from 0 mmBTU to 1,057,774 mmBTU for 1995

Indianapolis Power and Light

E.W. Stout Unit 9 heat input to 9,870 for 1995

E.W. Stout Unit 10 heat input to 9,420 for 1995

E.W. Stout Unit GT-4 heat input to 124,504 for 1995

E.W. Stout Unit GT-5 heat input to 130,245 for 1995

H.T. Pritchard Unit 1 heat input to 9,519 mmBTU for 1995

H.T. Pritchard Unit 2 heat input to 17,479 mmBTU for 1995

B. Non-Utility Large And Medium NOx Sources

Non-Utility NOx sources are important NOx sources in Indiana, according to USEPA, Office of Air and Radiation's *Calculation of Budget Components Technical Support Document* (October, 1997). In this document, Indiana's NOx emissions for the 2007 CAA base come to 177,888 tons per summer season, while the uncontrolled non-utility large and medium sources emissions account for 51,432 tons. This is 29% of the total NOx base case emissions in Indiana.

1. Comparing the Inventories

The EPA document *Calculation of Budget Components Technical Support Document* lists the large non-utility NOx sources in Appendix C. After checking this data, IDEM found that many sources listed were neither large sources nor medium sources and many large sources were not listed. See **Attachment B**. Since the 1996 inventory is more accurate than the 1990 inventory, IDEM developed the non-utility NOx inventory based on the 1996 data and made some changes based upon previous QA/QC reports and permit files. The tables from Appendix C, "Daily and Seasonal Non-Utility Point Source Emission for 2007 CAA Base" (Table 2-1) and "Daily and Seasonal Non-Utility Point Source Emission for Proposed Budgets" (Table 2-2), are incorrect. **Attachment C** compares those data with IDEM's data. IDEM was unable to locate some of the USEPA information regarding the medium sources. **Attachments D and E** are the 1996 Inventory of Indiana Non-utility NOx Large and Medium Sources.

IDEM developed this inventory in accordance with the criteria contained in the OTAG recommendations and USEPA's proposed rule:

A. Large Sources

- A boiler greater than or equal to 250 mmBtu/hour
- A reciprocating internal combustion engine greater than or equal to 8,000 horsepower
- A turbine greater than or equal to 20,000 horsepower
- Any other source greater than or equal to 2 tons/ average summer day.

B. Medium-sized Sources

- A boiler between 100 and 250 mmBtu/hour
- A reciprocating internal combustion engine between 4,000 to 8,000 horsepower
- A turbine between 10,000 and 20,000 horsepower
- Any other source between 1 and 2 tons/ average summer day.

If the source is an emission unit but has more than one segment (for example, a boiler uses multiple types of fuel) and the total emissions from all segments are greater than or equal to the above limitations (even if the individual segment's emissions are below the limitations), it is treated as one source and its segments separately listed in different categories in **Attachment D**.

To determine the control technologies and their efficiencies, the sources are classified by the SCC numbers in **Attachment E**. If the processes in the same category (for example, coal fired boilers) have the same emission factor and similar control technologies, they are classified as the same type.

According to present information, the 1996 inventory of sources identified in this document is 177 tons/day. The EPA base budget for non-utility emissions was about 240 tons/day.

2. 2007 Budget

The EPA recommendation suggested using BEA or EGAS growth factors to calculate 2007 budget emissions. IDEM used the EGAS growth factors in developing the projected inventory for Lake and Porter Counties and believes that the EGAS growth factors should for the most part also be applied to sources in other counties. Since the emissions from these other counties are much less than that from Lake and Porter, there will not be a significant error. For cement kilns, Clark County's ESSROC Materials' BEA growth factor was used. **Attachment F** lists the growth factors and 2007 budget emissions. The growth factors of many sources is 1.0 (some are even less than 1.0, i.e. negative growth). Therefore, the 2007 budget is almost equal to 1996 base year emissions.

3. Control Strategy

The EPA recommendation suggested 70% control for large sources and RACT for medium sources. **Attachment F** lists two levels of control for existing large and medium sources. To reach the 70 % control, most sources need the more stringent level of control (most sources need

Selective Catalytic Reduction and other high efficiency technologies). The average control efficiencies are as follows:

| Source Category | Control Level | Average Control Efficiency % |
|-----------------|---------------|------------------------------|
| Large Source | Level 1 | 40.95 |
| | Level 2 | 81.58 |
| Medium Source | Level 1 | 45.42 |
| | Level 2 | 72.04 |
| Total | Level 1 | 42.72 |
| | Level 2 | 77.80 |

IDEM has received several comments from sources with large and medium sized boilers which have actual emissions of only a few tons per year. It is not clear from the SIP Call document how to treat these sources. Some adjustment seems appropriate for sources in this situation. IDEM will address this issue more thoroughly in its supplemental comments.

C. Area Sources

USEPA has used the OTAG area source inventory. This inventory used an agglomeration of data sources: states, National Emissions Trends Database, the 1985 NAPAP, and other data sources. Although the area source category is a relatively small piece of Indiana's NO_x inventory, this patchwork of data sources is a poor estimate of emissions and needs to be rebuilt. For example, USEPA's area source inventory includes emissions from coal combustion at industrial sources. In fact, according to the OTAG inventory used by USEPA, this category represents *more than half* of the NO_x emissions being emitted by area sources. However, Indiana counts this category among its non-utility NO_x sources, since sources report it on their annual emissions statement. If, as IDEM suggested earlier, USEPA uses updated non-utility point source data, IDEM requests that any emissions in the area source inventory attributed to coal combustion at industrial sources (area source classification code 2102002000) be removed.

In light of these errors and improvements in data accumulation and emissions calculations, USEPA should not set final budgets for each of the states until the 1996 Periodic Emissions Inventory and National Emissions Trends Updates are complete. These are scheduled to be delivered to USEPA by July 15 of this year, and are the most comprehensive effort to date to correct and update the emissions estimates used by USEPA to calculate the budgets.

D. Onroad Mobile Sources

In Section III(B)(5)(b)(iv) of the proposed rule, USEPA has proposed to review the need for rules regarding fuels (sulfur content in gasoline and NOx emissions from diesel). If promulgated, USEPA will then adjust the states' budgets to reflect this change. IDEM believes that when and if future fuel regulations such as low sulfur gasoline and reformulated diesel fuel are developed, a state should receive credit for these reductions, rather than an adjustment of the budget by a certain amount. This would create a situation in which the USEPA simply reduces the budget by so many pounds and reapplies the 8% reduction in the case of Indiana. Giving states credit for any measures that were not modeled in the original SIP budget would aid states in finding sufficient reductions to meet the required reductions.

In Section III(B)(5)(b)(iii), USEPA proposes to project the states' highway vehicle budget for the 2007 ozone season based on the actual number of days that summer rather than use the OTAG typical weekday/weekend adjustment. IDEM believes that a seasonal approach based on the actual number of days in the 2007 ozone season is the appropriate approach to calculate the statewide NOx budget for motor vehicles.

In Section III(B)(5)(b)(iii), USEPA requests comment on the use of average temperatures for the affected months, as opposed to the OTAG temperature ranges from the OTAG episodes that were modeled. IDEM agrees that the OTAG temperatures represent extreme weather events and do not reflect average summer weather conditions. Indiana believes that the temperature ranges should be based on the 30-year climatological average.

In Section III(B)(5)(b)(ii), USEPA proposes to use actual 1995 VMT levels as the base year for the 2007 inventory projections in the final rule, instead of continuing to rely on 1990 VMT data. USEPA believes that this will improve the accuracy of the 2007 projections. Indiana concurs that USEPA should change the base year to 1995, thereby reducing the error in the projections. The Indiana Department of Transportation has provided Highway Performance Monitoring Data for 1995 and IDEM is submitting this information in an attachment to these comments. See **Attachment G**. IDEM suggests at this time that USEPA apply the OTAG growth rates to the new 1995 VMT to obtain a revised 2007 onroad mobile source budget, until the department can provide projected state-specific growth rates. The Indiana Department of Transportation and IDEM will be able to provide projected 2007 VMT on a statewide basis after April 15, 1998. See **Attachment H**. The Indiana Department of Transportation will be concluding its development of a statewide transportation model, which includes growth factors and speed data, but it is not ready at this time.

In Section III(B)(5)(d), the USEPA proposes that neither the highway vehicle budget or the overall NOx budget proposed in this rulemaking be used in the current conformity process under Clean Air Act section 176(c). IDEM agrees that a statewide emission budget should not be disaggregated for the purpose of conformity. The NOx budget for highway vehicles was developed on a statewide basis and should only be used in that capacity. Indiana agrees with USEPA's proposed approach to not use the statewide highway NOx budget for conformity determinations. States will still develop regional specific inventories for nonattainment and

maintenance areas. These inventories are for areas that should be used to set the budget for conformity determinations.

In Section III(B)(5)(b), the USEPA included in the proposed budget calculations the National Low Emission Vehicle (NLEV) program. At this time USEPA's position is that the NLEV is a voluntary program and if the Northeast States and automakers do not agree to participate, USEPA will adjust the states highway budgets accordingly. IDEM agrees that budgets would have to be adjusted to reflect this change. However, states should not be required to make up the difference if NLEV falls through.

D. Nonroad Mobile

USEPA has requested comment on the use of the 1995 National Trends Database estimate of nonroad activity levels. The "Trends" estimate is still based upon studies performed for USEPA and used by many states for an estimate of 1990 emissions levels. By using Trends estimate USEPA is simply using an inventory that was grown from 1990 levels to 1995 levels, and then grown to 2007 levels. This is no different than taking the 1990 estimates and growing them to 2007. USEPA should base estimates upon the data being gathered by the Office of Mobile Sources for use in the NONROAD model. This data would represent the most recent advancement in the estimation of nonroad emissions.